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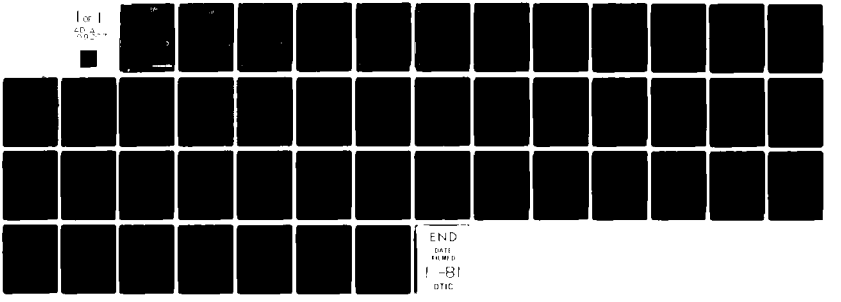

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PRELIMINARY

(6) FUNCTIONAL CAPABILITIES DESCRIPTION
(FCD)
FOR THE
CORPS INFORMATION MANAGEMENT SYSTEM
(CIMS).

(11) NOVEMBER 1978

(15) DAAK11-78-C-0102

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FOREWORD

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Appendix A Acronym List

1.0 INTRODUCTION

1.1 Purpose

The purpose of this document is to define those functions that shall be automated to support the U.S. Army Staff Message Center (SMC) data handling activities. This document establishes the baseline for a systems design of an initial capability Corps Information Management System (CIMS).

1.2 Scope

The functions described herein shall define the initial set of capabilities to be provided by the Corps Information Management System (CIMS). The functions have been selected to support the existing needs of a typical U.S. Army Corps SMC through selective application of computer support to assist the operators and improve the overall SMC efficiency. The CIMS message flow, operator tasks and data handling responsibilities are compatible with the current U.S. Army doctrine and directly support the assigned responsibility of the Corps SMC.

1.3 Staff Message Center Responsibility

The mission of the Staff Message Center (SMC) is to transmit, receive, and deliver official messages for the commanders and staff of the headquarters which it serves. The present operations involve primarily manual procedures employing teletype transmission equipment and a point-to-point tape-relay communication mode of operation for transmission and receipt of messages. The following paragraphs provide a general description of the SMC responsibilities for each of these message handling functions.

Message Reception - The SMC receives inputs from its own Tactical Operations Center, its subordinate field units, or from echelons above the Corps level. These inputs are received in the form of punched paper tape or typed on DD-173 forms. The SMC Clerks must verify the accuracy of the destination addresses and the authority of the individual releasing the messages. A unique identifier must be assigned to each message to initiate the accountability process for that message.

Message Preparation - The contents of the DD-173 form must be translated into paper tape form for transmission. This process involves the typing, proofreading, and necessary editing of errors to assure an accurate translation has been effected. Messages received in punched paper tape form must be transformed to hardcopy media, annotated with security caveats, and necessary copies prepared.

Message Validation - During the message handling process, the SMC personnel must verify the correctness and the authority of predefined parameters. Since Routing Indicators (RI) are unique alphabetic character strings for each addressee, the clerks are required to search addressee tables to obtain the related RI. Additionally, the SMC must verify the authority of the releaser versus the message precedence level.

Message Dissemination - Messages will be disseminated from the SMC in either punched paper tape or hardcopy form. Unique copies of a paper tape and/or hardcopy may be required to accomodate transmission to the multiple addressees. Prior to reading the paper tape into the transmission device, the clerk is required to verify that the security level of the communications line is compatible with that of the message contents. Hardcopy messages will be disseminated to the appropriate organizations in the Tactical Operations Center while observing the required security control procedures.

Message Accountability - All messages received and transmitted by the SMC must be accounted for. Throughout the SMC handling process a historical record of each message must be generated to assure that incoming messages cannot be unretrievably lost. The history records must be capable of identifying the individual verifying or editing the contents, and the destinations of each copy, along with the related time of each event.

The Corps SMC message handling techniques are performed in accordance with the U.S. Army Signal Corps Tactical Telecommunications Center Operation philosophy. (See Applicable Document 2.4). The primary communications media consist of teletype devices, telephone, and messenger delivery and involves the preparation, and distribution of large volumes of punched paper tapes or hardcopy printouts.

1.4 Message Handling Personnel

The current organizational and procedural responsibilities of SMC personnel provide for the sequential flow of a message through the SMC with each operator performing specific tasks. The CIMS capability assists the operators in performing these tasks and in several operations permits the combining of individual tasks into a single task to achieve better message handling efficiencies. The message handling personnel necessary to accomplish the SMC responsibilities using the CIMS are as follows:

1.4.1 SMC Supervisor (SMCS)

Responsible for the overall operation of the SMC. The SMCS will resolve problems encountered in the preparation and dissemination of messages, and reallocate SMC personnel to other tasks as necessary to maintain the required message processing flow. When necessary the SMCS can serve in the capacity of a Proofreader.

1.4.2 Acceptance/Delivery Clerk (A/D)

Responsible for the acceptance of DD-173 forms from messengers. The A/D inspects the message to assure all prerequisite entires are completed and forwards the form to the Composition Clerks. Messages that cannot be automatically disseminated within the Corps by CIMS (due to classification constraints, special handling requirements, etc.) will be handled by the A/D by requesting messenger service. When time permits, the A/D can serve as either a Composition Clerk or Proofreader.

1.4.3 Composition Clerk (C/C)

Responsible for translating the contents of the DD-173 form into the CIMS. When time permits the C/C can also serve as a Proofreader.

1.4.4 Proofreader

Responsible for comparing the contents of the DD-173 form against the information entered into CIMS to verify the translation accuracy. When time permits individual Proofreaders can also serve as C/C's.

1.4.5 Send Operator (S/O)

Responsible for the control and punching of the outgoing paper tape messages. The S/O will remove each paper tape and feed it into the applicable paper tape reader. When a successful read has been effected, the S/O will provide appropriate entires to the CIMS. When time permits the S/O can also serve as a Receive Operator.

1.4.6 Receive Operator (R/O)

Responsible for the control and feeding of incoming paper tape messages into the CIMS paper tape readers. When an incoming message is detected by CIMS to be incomplete (i.e., invalid start-of-message, and/or end-of-message sequences), the R/O will perform the necessary tasks to obtain a retransmission. When time permits, the R/O can also serve as an S/O.

1.4.7 File Clerk (F/C)

Responsible for the filing of the DD-173 originals and messenger hardcopy receipts. When time permits the F/C can serve as an A/D, C/C, or Proofreader.

1.4.8 Staff Officers

Where terminal devices are available, Staff Officers are responsible for the entry into CIMS of DD-173 type messages generated by their Staff Element. The Staff Officers will perform the function of a C/C to prepare a message for transmission, and thereby save the time required for courier pick-up and the time required in A/D and C/C message preparation. The CIMS will perform those functions necessary to collect and record the logs and historical records required by the SMC.

1.4.9 Courier

Responsible for the pick-up and delivery of messages for the Corps. The Courier will obtain and deliver the necessary message receipts, where applicable.

2.0 APPLICABLE DOCUMENTS

The following documents and standards are references from which the CIMS Functional Capabilities Specification were derived. In the event there is a conflict between these documents and the CIMS Specification, the CIMS Specification takes precedence.

2.1 ACP-127 (G) Communications Instructions, Tape Relay Procedures.

2.2 JANAP-128 (H) Automatic Digital Network (AUTODIN) Operating Procedures.

2.3 TM-11-490-2 Army Communications Facilities Telecommunications Center Operating Procedures.

2.4 FM-24-17 Tactical Telecommunications Center Operation.

2.5 CIMS Information Flow and Systems Analysis Notes, dated October 1978.

3.0 CORPS INFORMATION MANAGEMENT SYSTEM (CIMS)

3.1 The CIMS Concept

The Corps Information Management System (CIMS) is a computerized message processing unit designed to automate selected message handling functions for a typical Corps Staff Message Center (SMC) within the Corps Tactical Operations Center (CTOC).

The initial CIMS capability defined in this document is directed at automating those repetetive procedural tasks that now require an excessive amount of the operator's time. The system will provide desireable operator aids to assist in the building, editing, logging, filing and distribution of messages within the SMC responsibility. By allowing the computer to perform these tasks under positive operator control, the CIMS can provide a more efficient, effective, and accurate data handling capability.

Through the use of CIMS terminal and printer devices located in the Corps Staff Offices additional efficiencies can be attained by elimination of most messenger pick up and delivery delays. The Staff Officers can directly compose a message, edit that message to assure the contents are accurate and then forward the message to the SMC for transmission. The CIMS will provide the required controls and log records of each message thereby minimizing the manual message handling tasks and achieving a significant improvement in the time required to disseminate information.

3.2 CIMS Design Objectives

The initial CIMS design objective shall emphasize system support capabilities to assist SMC personnel in improving the following functional problem areas:

3.2.1 Message Throughput

The time delays incurred in message throughput during large volume message handling periods.

3.2.2 Message Accountability

Messages that are "lost" in the system and either arrive late or do not arrive at the intended destination.

3.2.3 Log Maintenance

The recording of discrete event times in the message handling cycle is performed intermittently, illegibly, or not at all.

3.2.4 Message Preparation

Preparation and editing of messages via teletype devices requires the operator to manually intervene and merge paper tapes in order to modify input errors.

3.2.5 Priority Handling

The necessity for operators to complete the handling of an individual message before being able to respond to a priority message. When the operator interrupts the message preparation sequence, in order to handle a priority message, the effort expanded on preparing the previous message is negated and must be reperformed.

3.2.6 Performance Assessment

Evaluation of the message handling efficiency for a given exercise requires extensive data extraction and analysis efforts and is not generally available until weeks after completion of the exercise.

3.2.7 Archive Retrieval

The retrieval of a previously processed message requires a manual search of multiple logs and physical files. The success of this procedure is dependent of the legibility and accuracy of the information recorded by the operators.

3.2.8 Incorrect Addressing

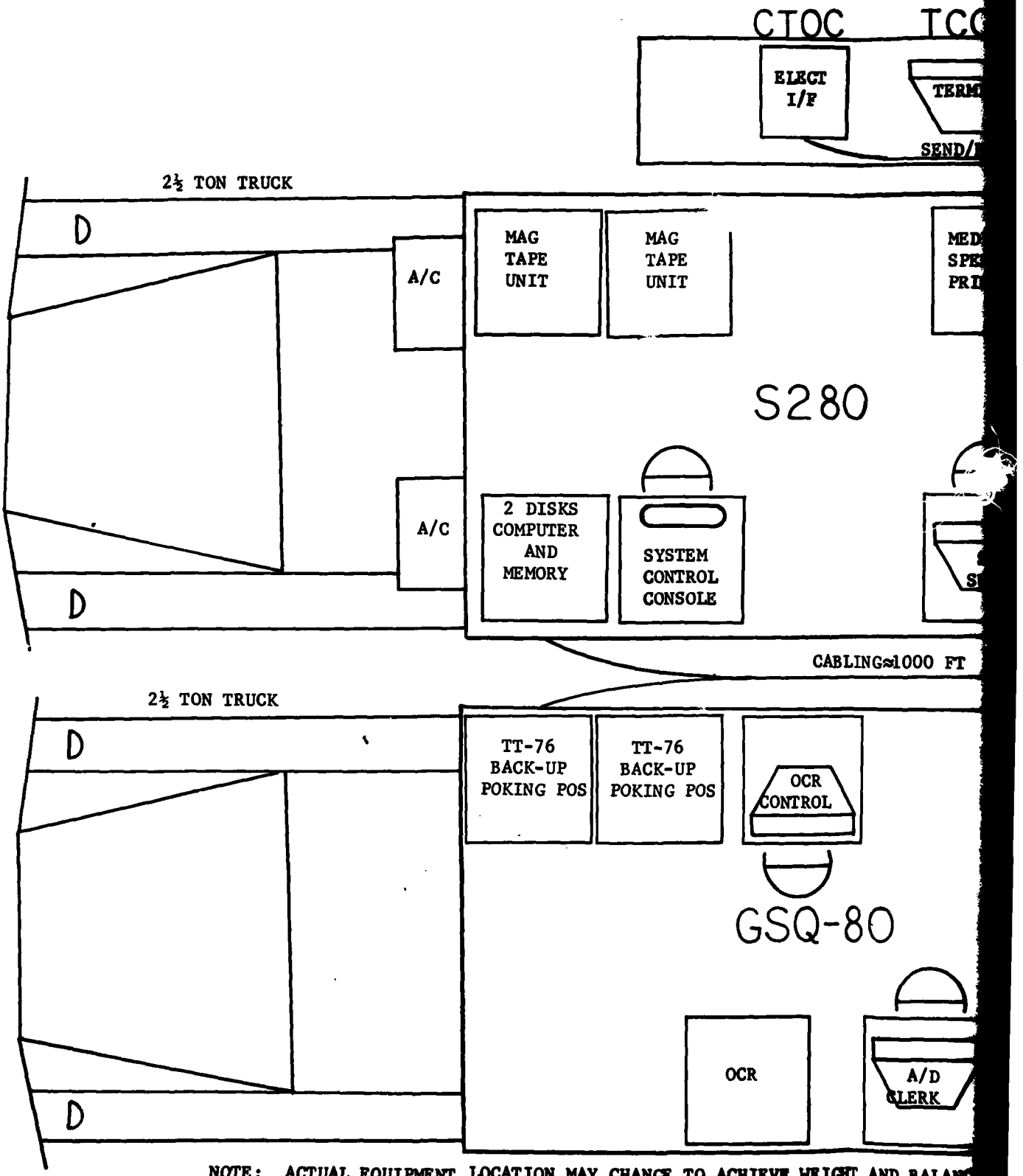
Since the destination addresses are mostly in acronym form, the requirement to interpret the addressee, select the corresponding Routing Indicator (RI), and then type the complex RI is highly susceptible to errors.

3.3 CIMS Configuration

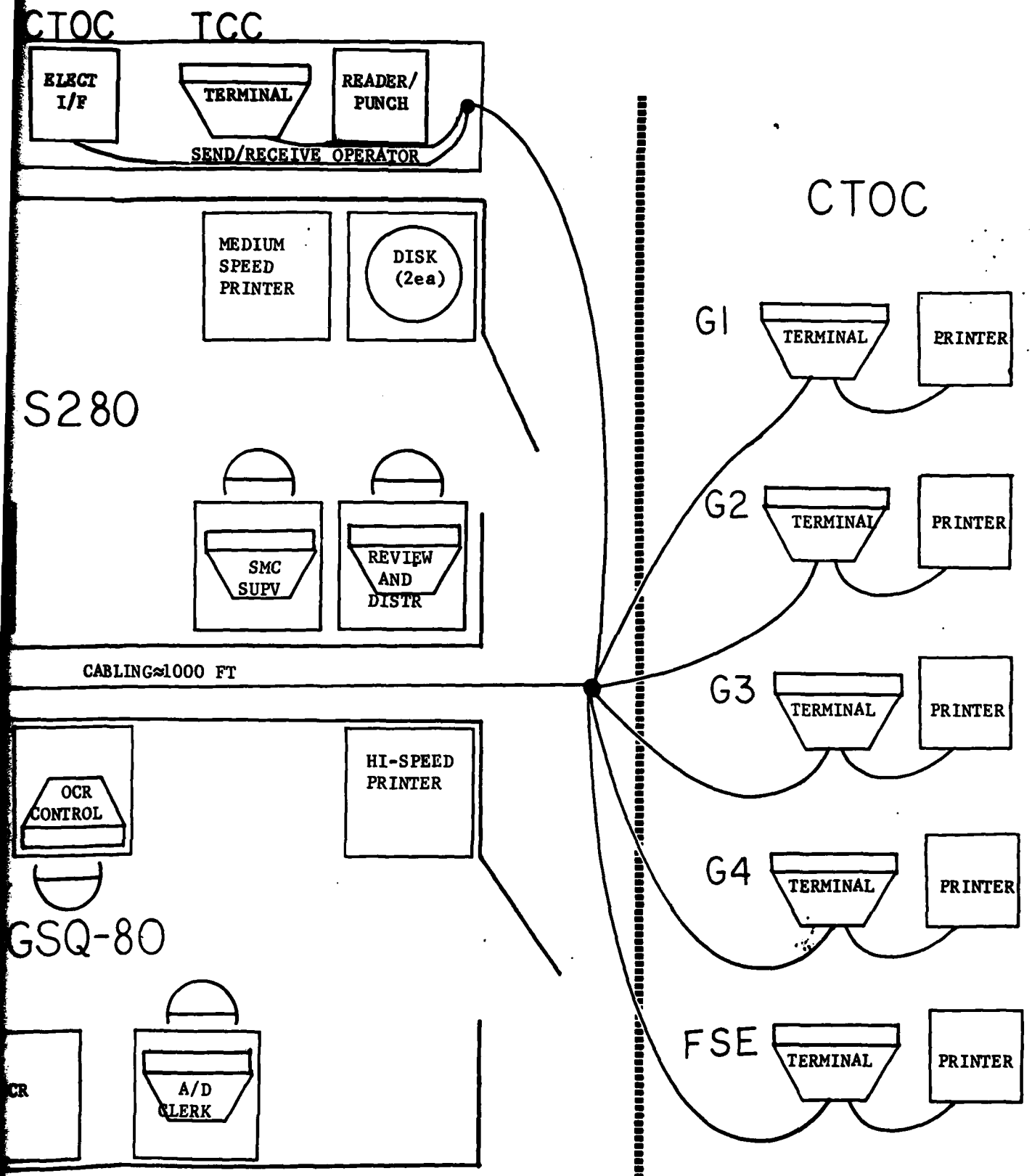
The CIMS will consist of a central processor, operator terminals, and related peripherals. The components will be located in S-280 shelters and within the Corps Staff Element locations. The CIMS has been functionally partitioned into the following areas:

- o SMC Supervisor/Computer Area
- o Message Preparation/Communications Interface Area
- o Remote Staff Element Area

The allocation of CIMS hardware components is depicted in Figure 3-1.



NOTE: ACTUAL EQUIPMENT LOCATION MAY CHANGE TO ACHIEVE WEIGHT AND BALANC



IEVE WEIGHT AND BALANCE DISTRIBUTION.

CIMS MOBILE CONFIGURATION
FIGURE 3-1

3.4 CIMS Message Flow

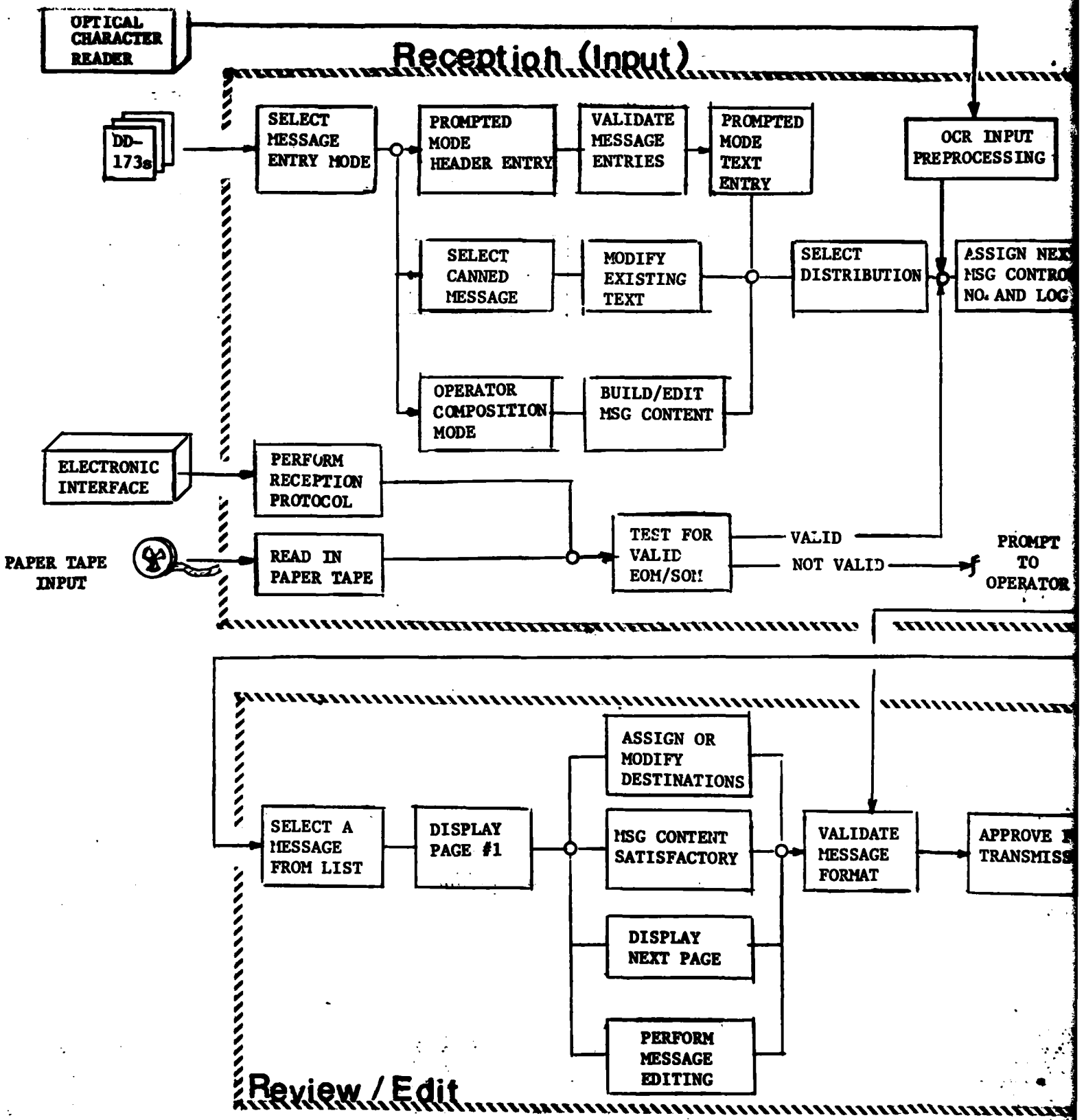
An overview of the message flow through the CIMS is provided in Figure 3-2. Messages will be input to the system via paper tape readers, electronic data interface, or through operator terminal entry. When a paper tape or electronic data interface message is received, the message header will be analyzed by the system to determine if a complete message has been received. If the message is not complete a prompt will be sent to an operator to either add the missing information or issue a retransmit request to the transmitting station. Valid messages will be logged, stored, and ordered by precedence and special handling requirements. A summary of the message will be prepared to assist the operators in selecting the next message requiring his action.

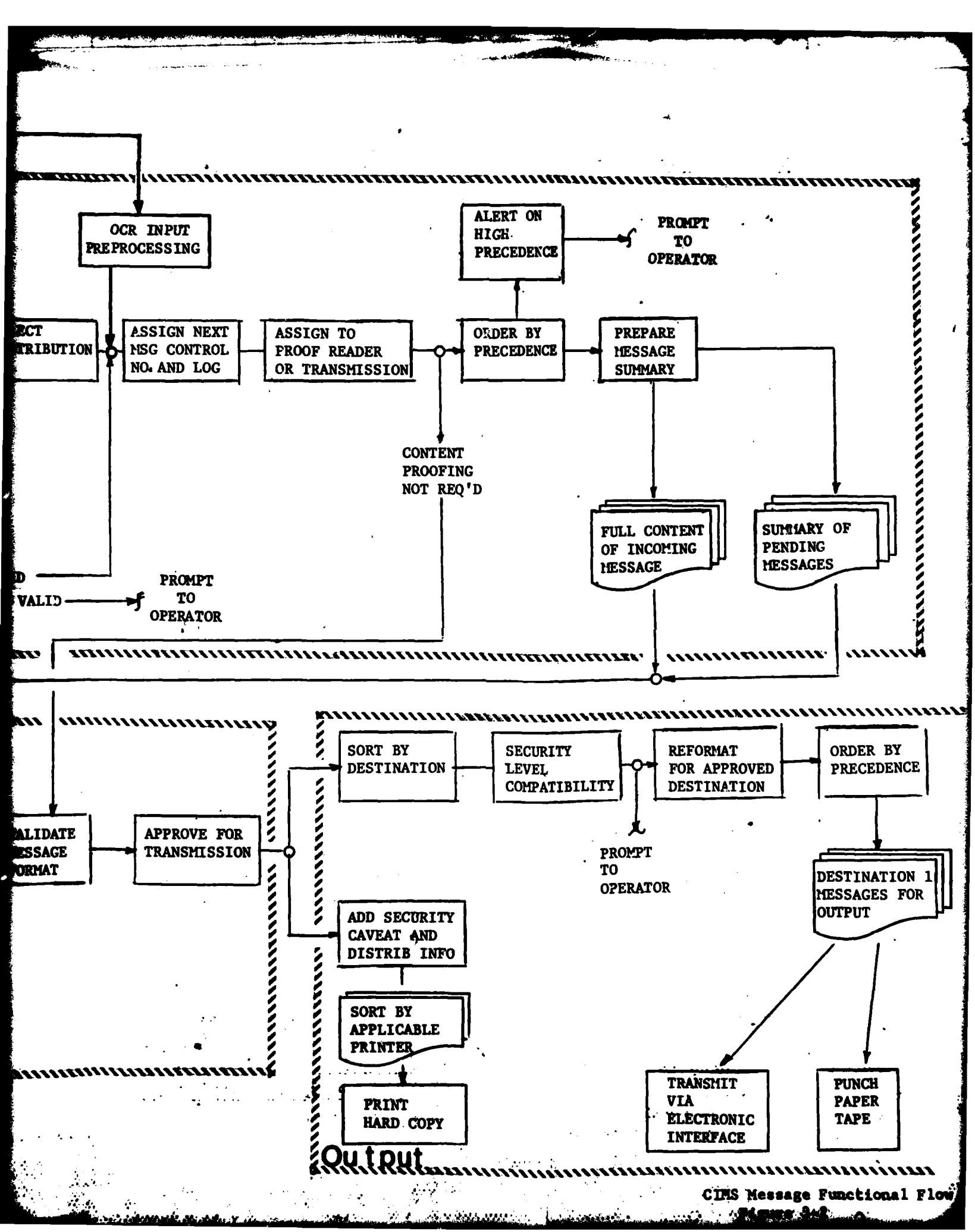
The system will then assist the operators in preparing messages by providing preformatted templates, prompted header/text creation, recall and editing of previous message contents, verifying authorizations, and by automation of most logging and filing functions.

When a message has been selected by an operator for review (proofreading) and dispositioning, the system will support the operator in the review, editing, monitoring and dissemination functions. The function buttons will be assigned to enable system operators to rapidly perform highly repetetive actions (i.e., delete character, insert line, next page, etc.). When the operator signals that he is satisfied with the message contents, the system will route the message to the paper tape punch, printer and/or other terminals.

Those messages that have been approved for external transmission will be automatically segregated by their routing indicators and reformatted to the required ACP-127 or JANAP-128 structure. The security level clalssification will be validated to assure that the message content level is compatible with the identified destination. The system will rank order the messages awaiting transmission in a priority sequence based on the highest precedence, and special handling requirements. When the transmission terminal operator initiates the punching of a paper tape of the message, the system will assign a Transmission Identifier (TI), log the time of transmission and update pertinent message status tables.

Messages requiring hardcopy distribution to internal Corps Staff Officers will be automatically routed to pertinent display and/or printer devices located near the intended recipient. For those messages exceeding the approved security classification of the CIMS, authorized courier service will be utilized to effect the distribution.


OPTICAL CHARACTER READER
Reception (Input)
DD-173s
SELECT MESSAGE ENTRY MODE
PROMPTED MODE HEADER ENTRY
VALIDATE MESSAGE ENTRIES
PROMPTED MODE TEXT ENTRY
OCR INPUT PREPROCESSING
SELECT CANNED MESSAGE
MODIFY EXISTING TEXT
SELECT DISTRIBUTION
ASSIGN NEX MSG CONTRO NO. AND LOG
OPERATOR COMPOSITION MODE
BUILD/EDIT MSG CONTENT
ELECTRONIC INTERFACE
PERFORM RECEPTION PROTOCOL
PAPER TAPE INPUT
READ IN PAPER TAPE
TEST FOR VALID EOM/SOM
VALID
NOT VALID
PROMPT TO OPERATOR
SELECT A MESSAGE FROM LIST
DISPLAY PAGE #1
ASSIGN OR MODIFY DESTINATIONS
MSG CONTENT SATISFACTORY
DISPLAY NEXT PAGE
PERFORM MESSAGE EDITING
VALIDATE MESSAGE FORMAT
APPROVE TRANSMIS
Review / Edit



CIMS Message Functional Flow

3.5 CIMS Operator Interface

The primary operator interface shall be via a computer terminal. All operating positions shall utilize the same type of terminal device to allow device interchangeability and to provide system design uniformity. Although the devices will be physically the same, the individual functional capabilities allocated to specific operating positions will be controlled by the system.

3.5.1 Display

The system shall present information to the operator on the terminal display screen. The information will be in one of the following forms:

3.5.1.1 Fill in the Blanks

The display will consist of a topic descriptor followed by underscore marks for operator character entry. The topic descriptor (i.e., Drafter Name, From, etc.) will be protected such that the operator cannot overtype it. The underscores following the topic descriptor, shall be overtyped by the operator when entering the required data. Where the length of the data entry is predefined, the exact number of underscores will be displayed.

3.5.1.2 Menu Selection

The display will provide a menu (list) of allowable items or functions that the operator may select from. The keyboard space bar or the cursor control function keys will be used to position a selection symbol adjacent to the desired selection.

3.5.1.3 Text Entry

The display will provide a blank screen to allow operator to enter free text data. The text data will be entered via the terminal keyboard.

3.5.2 Keyboard

The primary operator data entry capability shall be via the terminal keyboard. The keyboard shall have a standard typewriter key format such that normal typing techniques are applicable.

3.5.3 Function Keys

A function key pad will be provided to allow the operator to execute selected highly repetitive tasks by a single button depression. Preliminary assignment of the function keys include (functional descriptions of individual capabilities are provided in Section 4.2):

ENTER
CHARACTER INSERT (CI)
CHARACTER DELETE (CD)
LINE INSERT (LI)
LINE DELETE (LD)
CURSOR CONTROLS (FOUR KEYS)
SUSPEND (SUS)
NEXT PAGE (NP)
PREVIOUS PAGE (PP)
CANCEL
ACCEPT ALERT

4.0 CIMS FUNCTIONAL CAPABILITIES

4.1 System Control

4.1.1 System Initialization

The capability to initialize the CIMS, (i.e., start up the system) shall be provided. Loading and initialization of the CIMS Software Programs shall be performed via the System Control Console. The console shall print out a discrete event record of activities performed during system initialization.

4.1.2 Peripheral Configuration

The capability to establish and/or change the system peripheral configuration shall be provided. System peripheral configuration activities will be conducted during initialization time via the System Control Console. System peripherals are defined as the magnetic disk units, the magnetic tape units, printers, punches, readers and operator terminals. The ability to add other devices (e.g., punch card readers) shall not be precluded.

4.1.3 Operator Position Assignment

The system shall provide the capability to establish and/or change the operator terminal assignment, (i.e., make terminal #1 the A/D Clerk position or the CC position or the Proofreader position, etc.). This function may be performed either at system initialization time or any time thereafter.

4.1.4 Protected File Update

The system shall allow the operator to add, delete, and/or modify specific files stored in the system. The following files are considered to be protected in that only authorized operators shall be permitted to update them:

- o System access passwords
- o Authorized DD-173 Releaser Names
- o Approved PLA/RI/AIGs
- o Communication Destination Security level (may be allocated to hardware)

4.2 Access Control

4.2.1 Log On

Each operator will be required to successfully "sign-on" to the system before being permitted to access or manipulate data. The LOG ON will consist of entering the following:

a. Operator's name;

b. Assigned position (i.e., A/D Clerk, Composition Clerk, etc.);

c. A password.

The CIMS shall validate the password and record the above parameters. If the password is not valid, the system shall prompt the operator to repeat the information. The display shall be of the fill-in-the-blanks form, however, the password shall not visibly indicate the required number of characters. Additionally, the operator keyboard entries for the password shall not be echoed on the display. A successful log on shall provide the operator with a TASK SELECTION display of those tasks that are authorized for that operating position.

4.2.2 Log Off

Each operator shall "sign-off" by selecting the LOG OFF item of the TASK SELECTION display, and then depressing the ENTER function key. This action shall cause the TASK SELECTION display to be replaced with the LOG ON display. The system shall record pertinent parameters to provide an operator history.

4.2.3 Data Base

The contents of the CIMS data base shall not require compartmented mode structuring. Access control procedures will be imposed only as specified in this document.

4.2.4 Operator Tasks

Each operating position shall be permitted to perform a predefined set of functions. For example, only specific operating positions shall be allowed to release messages, modify passwords, etc. A matrix of operating positions versus capability is provided in Section 5.0.

4.3 Data Reception

The CIMS will receive inputs from external sources in the form of teletype formatted paper tapes, electronic data or via the SMC operators terminal entries. The system shall accept, process and disseminate these inputs in accordance with the following requirements.

4.3.1 Paper Tape Reception

4.3.1.1 Input Media

Messages shall be entered into the system, via paper tape reader devices, by SMC operating personnel. The messages shall be in the form of torn paper tapes with the contents formatted in accordance with the International Telegraph Alphabet No. 2 (ITA#2), five (5) level BAUDOT.

4.3.1.2 Input Control

A paper tape segment may contain one or multiple messages. All messages contained on that segment shall be complete (e.g., each message shall contain both a start of message (SOM) sequence and an end of message (EOM) sequence). The system shall detect each EOM identifier and stop the paper tape. Messages failing the SOM or EOM criteria shall cause an operator prompt to be generated.

4.3.1.3 Message Types

The system shall recognize and process the following ACP-127 and JANAP-128 message types:

ACP-127	- PLAINDRESS
	- ABBREVIATED PLAINDRESS
	- NATO SUPPLEMENT 3
JANAP-128	- PLAINDRESS
	- ABBREVIATED PLAINDRESS

Specific format characteristics for the above message types are defined in Applicable Documents 2.1 and 2.2.

4.3.1.4 Multi Page Messages

The system shall accept multiple page messages and shall handle them as a single message for purposes of operator interface and output distribution.

4.3.1.5 Reception Accountability

Each message accepted by the system (i.e., has a valid SOM and EOM) shall cause a journal entry to be made. The entry shall include time of acceptance, a unique identifier code, and the contents of the message.

4.3.1.6 Internal Distribution

Each message received via the paper tape readers will be routed to the storage devices for temporary storage. A message summary shall be prepared and integrated into the Input Message Summary queue. The Input Message Summary queue will also contain summaries of messages entered by the CIMS terminal operators. The messages in the queue shall be integrated and ordered by the highest message precedence code, special handling identifiers within that precedence, and then First-In/First-Out (FIFO).

4.3.1.7 Operator Alert

Received messages having a precedence code of Z (Flash) shall cause an alert prompt to appear on the operators display.

4.3.2 Electronic Data Reception

Messages will be received by the SMC primarily in the form of punched paper tape. Although the initial CIMS delivery is not intended to provide an automatic data reception interface to bypass the punching and reading of paper tapes, the CIMS design shall not preclude the incorporation of this capability in a future system upgrade.

4.3.3 Operator Message Preparation

The SMC operators are required to translate the contents of approved DD-173 formatted messages into appropriate JANAP-128 or ACP-127 format. The CIMS shall assist the operator by providing easy-to-use and time efficient techniques to enter the message contents. Where applicable, the system shall perform validation checks on the information to improve the accuracy and control of the information.

A sample DD-173 has been annotated to assist the reader in relating operator functions to corresponding data entries. (See Figure 4-1). The functions described below depict typical operator actions necessary to translate a DD-173 using the CIMS. Variations to these steps to accommodate non-nominal data entries are described in the System Processing function section.

4.3.3.1 Prompted Message Entry

Prior to initiating a Prompted Message Entry task it is assumed that the operator has successfully logged-on and has been provided the TASK SELECTION display.

4.3.3.1.1 Task Selection

The operator shall be provided a menu of authorized tasks for the operating position. The operator shall select MESSAGE ENTRY and then depress the ENTER key.

4.3.3.1.2 Message Entry Mode

The operator shall be provided a menu of applicable message entry modes. The operator shall select PROMPTED MESSAGE ENTRY and then depress the ENTER key.

4.3.3.1.3 Security Classification (A of Figure 4-1)

The operator shall be provided a menu of the applicable security classifications. The operator shall select one of the items and depress the ENTER key.

JOINT MESSAGEFORM

(A) CONF.

PAGE	DTG/TIME RELEASED	PRECEDENCE ACT	PRECEDENCE INFO	LMF	PLAIN	CIP	FOR MESSAGE CENTER/COMMUNICATIONS CENTER ONLY DATE - TIME	MONTH	YR
1 OF 1 (B)	061215	P	R				005 (G) (H) 061300Z	Jul	78

BOOK

(C) (D) MESSAGE HANDLING INSTRUCTIONS

(I) FROM: CDR. V CORPS HQ.

(J) TO: CDR. 153RD MECH.

(K) INFO: CDR. VII CORPS. HQ.

(M) SUBJECT: PREMATURE DETONATION OF DELAY TARGETS (C)

PREMATURE DETONATION OF DELAY TARGETS IN CORPS ZONE IS A MAJOR CONCERN. WHAT ARE SPECIFIC PLANS FOR PREVENTING PREMATURE DETONATION?

BT

(N)

DISTR.

FSE
G-3 Plans (L)
ASIC

SAMPLE DD-173 MESSAGE FORM
FIGURE 4-1

DRAFTER TYPED NAME, TITLE, OFFICE SYMBOL AND PHONE

MAJOR R. JACKSON VC-HQ. (E)
X317 JULY 6, 1978

SPECIAL INSTRUCTIONS

UNCLASS

XY

06 JUL 1978

RELEASER

TYPED NAME, TITLE, OFFICE SYMBOL AND PHONE

COL. R. THOMAS VC-HQ X391 (F)

SIGNATURE

CLASSIFICATION

UNCLASSIFIED - TEXT EXAMPLE ONLY

4.3.3.1.4 Drafter or Releaser Time (B of Figure 4-1)

The operator shall be provided a six (6) space "fill-in-the-blanks" form. The operator shall type in the information from "B" and depress the ENTER key.

4.3.3.1.5 Action Precedence (C of Figure 4-1)

The operator shall be provided a menu of the applicable action precedence classifications. The operator shall select one of the items and depress the ENTER key.

4.3.3.1.6 Info Precedence (D of Figure 4-1)

The operator shall be provided a menu of the applicable Info Precedence classifications. The operator shall select one of the items and depress the ENTER key.

4.3.3.1.7 Drafter Name (E of Figure 4-1)

The operator shall be provided a "fill-in-the-blanks" form. The operator shall type in the rank, initial(s), and surname from "E" and depress the ENTER key.

4.3.3.1.8 Releaser (F of Figure 4-1)

The operator shall be provided a "fill-in-the-blanks" form. The operator shall type in the rank, initial(s), and surname from "F" and depress the ENTER key.

4.3.3.1.9 From (I of Figure 4-1)

The operator shall be provided a menu of predefined PLAs. The last line shall be a "fill-in-the-blanks" form. The operator shall either select a menu item or shall enter the desired PLA on the last line and shall then depress the ENTER key. The operator shall then be provided the TO display.

4.3.3.1.10 TO (J of Figure 4-1)

The operator shall be provided a menu allowing for selection of frequently used addresses, the complete list of authorized TO addresses, a predefined group of addresses, or a "fill-in-the-blanks" form.

Frequently Used Addresses - The operator shall select an addressee and depress the ENTER key. The cursor shall be repositioned to the top of the menu and the operator shall be permitted to select multiple addresses. If the selection has been completed the operator shall again depress the ENTER key. The operator shall then be provided with the next sequenced display.

Complete List of Addresses - When the COMPLETE LIST item is selected, the operator shall be provided with a menu of all authorized addresses. The operator may sequence forward and backwards through the multiple page menu using the function keys. The operator shall select the desired addresses using the cursor and depress the ENTER key. If no further selections are necessary the operator shall depress the ENTER key. The operator shall then be provided with the next sequence display.

Predefined Addressee Groups - When the operator selects the PREDEFINED GROUPS item from the menu, the system will provide a "fill-in-the-blanks" template. Based on a predefined hardcopy list of high usage addressee groupings, the operator will type in a one or two character alpha-numeric identifier selected from the appropriate hardcopy grouping. The operator shall then depress the ENTER key. The operator will then be provided with the next sequential display.

Fill-In-The-Blanks Form - When the operator selects the OPERATOR IDENTIFY item from the menu, the operator shall be provided a "fill-in-the-blanks" form. The operator shall type in the information from "J" and depress the ENTER key. The system shall then provide an additional "fill-in-the-blanks" form below the previously entered PLA. If additional TO PLAs are identified in "J", the operator shall repeat the process until all PLAs have been typed in. The operator shall depress the ENTER key without typing any characters into the bottom "fill-in-the-blanks" form. When the information has been accepted, the operator will be provided with the INFO display.

4.3.3.1.11 INFO (K of Figure 4-1)

The operator and the system functions shall be identical to those performed for the TO PLAs, except that the menu addresses may differ and will be transferred from "K". When the information has been accepted, the operator will be provided with the DISTRIBUTION display.

4.3.3.1.12 Distribution (L of Figure 4-1)

The operator shall be provided a menu of the authorized Corps internal hardcopy distribution. The operator may select one or more items and then depress the ENTER key. If internal distribution is not indicated, the operator shall depress the ENTER key without making a selection. The operator will be provided with the SUBJECT LINE display.

4.3.3.1.13 Subject Line (M of Figure 4-1)

The operator will be provided a "fill-in-the-blanks" form. The operator shall type in the information from the DD-173 form Subject Line and then depress the ENTER function key.

4.3.3.1.14 Text (N of Figure 4-1)

The operator shall be provided a blank screen and will type the message contents. When the message contents have been typed, and edited as necessary to provide an accurate translation, the operator shall depress the ENTER function key. The system shall then provide a blank display. The operator shall continue typing the message as on the previous page. If the contents of the message were completed on the first display, the operator shall again depress the ENTER function key to indicate that the message contents have been completed.

4.3.3.1.15 Serial Number/DTG Assignment

The system shall perform validation tests to verify that the Releaser has been authorized to approve this message for transmission. If the criteria is satisfied, the system will respond with a display of the SMC's serial number and date/time group assigned to this message. The operator shall manually record this information on the DD-173 in "G" and "H" respectively. The operator shall then depress the ENTER key. If the criteria is not satisfied, the system shall prompt the operator and identify the nature of the conflict(s). The operator shall then make necessary corrections and depress ENTER key. If the conflict cannot be resolved by the operator, the operator shall depress the ENTER key two (2) times and the system will route the message to the SMCS. The operator will be provided with the TASK SELECTION display.

4.3.3.1.16 Disposition

The operator will be provided a menu of the applicable message disposition destinations, (i.e., transmit, hardcopy device, other terminals, etc.). The operator shall select one or more of the items and then depress the ENTER key. The operator shall then be provided the TASK SELECTION display.

4.3.3.2 Canned Message Entry

Many messages prepared by the operators are repetitive or require only minor modifications to previous transmissions. The system shall provide for the storage of selected messages. When the operator selects CANNED MESSAGE from the MESSAGE ENTRY MODE display, the system will provide a menu of the saved messages. The operator shall select one item from the menu and the contents of that message shall be displayed. The selected item shall not be deleted from storage. The operator may then modify the text contents, but not the header, using the text editing features and process the message for transmission. The system shall automatically assign a new serial number and DTG to the message and perform the applicable logging functions.

4.3.3.3 Operator Composition Entry

The operator shall have the capability to prepare a message for transmission starting with an empty screen. When the operator selects OPERATOR COMPOSITION from the MESSAGE ENTRY MODE, the system will provide a blank screen. The operator will build the complete message via keyboard entry and the system text editing features. The operator must prepare the message contents in the final transmitted (i.e., JANAP-128 or ACP-127) form. When the operator signals the message preparation is complete, the system will assign a unique serial number, a DTG, and will perform the applicable logging functions. The system automatic verification features available in the other message modes will not be performed, and therefore, the accuracy and control responsibility shall be incumbent on the operator. Messages prepared by Staff Elements shall NOT be directly released but shall be routed via the SMC.

4.4 Data Products

4.4.1 Paper Tape Transmission

The CIMS shall prepare punched paper tapes using the ITA#2 standards. The message output media is 7/8 inch paper tape punched in 5 level BAUDOT. The tape will have a human readable leader specifying the destination channel identification (CID), security classification, precedence level, and station serial number (SSN). The tape contents will be messages in the following ACP-127 and JANAP-128 formats:

ACP-127	- PLAINDRESS
	- ABBREVIATED PLAINDRESS
	- NATO SUPPLEMENT 3
JANAP-128	- PLAINDRESS
	- ABBREVIATED PLAINDRESS

Detailed definition of the above formats are described in Applicable Documents 2.1 and 2.2.

4.4.1.1 Destination Formatting

The CIMS prepared punched paper tapes will be input to various paper tape reader devices for actual transmittal to the intended destination. To accomodate the various destinations, the CIMS will prepare the message output in the applicable ACP-127 or JANAP-128 formats where required. The system shall prepare an individual tape appropriately formatted for each TO and INFO addressee in the CIMS output message.

4.4.1.2 Release Ordering

Messages approved for transmittal from CIMS will be presented to the punch tape device(s) in a prioritized sequence. Messages having the highest precedence code will be first in the stack. Messages having special handling indicators will be ordered such that they will be processed first within their precedence group.

4.4.1.3 Security Verification

The system shall verify that the destination transmission channel security level is equivalent to or exceeds the classification level of the transmitted message. If the comparison is satisfactory the message shall be queued for transmission. If the comparison is not satisfactory, the message shall not be transmitted and a prompt will be displayed to the operator identifying the conflict and the affected message. The operator must then resolve the conflict.

4.4.1.4 Punch Initiation

Punching of the paper tapes will be under the positive control of the operator. The operator shall be responsible to enter predefined parameters at a terminal to indicate the transmission time of the tape.

4.4.1.5 Output Logging

The system shall log the actual time of end-of-message punching with the current date/time group. This time will be referred to as the Time-of-Punch (TOP). The message contents, SSN, and the TOP shall be journalled. The actual Time of Transmission (TOT) shall be logged via operator entry.

4.4.1.6 Channel Backlog

When requested by the operator a dynamic status display shall provide the current transmission queue status on an individual channel basis. The highest priority message queued for each channel will be displayed along with the applicable date/time group.

4.4.2 Electronic Data Transmission

Messages will be transmitted by the SMC primarily in the form of punched paper tape. Although the initial CIMS delivery is not intended to provide an automatic data transmission interface, to bypass the punching and reading of paper tapes, the CIMS design shall not preclude the incorporation of this capability in a future upgrade.

4.4.3 Hardcopy Printouts

The system shall prepare hardcopy printouts of messages transmitted externally and within the Corps. The printouts shall be in the applicable ACP-127 or JANAP-128 format. The hardcopy shall serve as a permanent file copy of the SMC, or the Staff Elements selected for internal distribution.

4.4.3.1 Security Caveat

Each page of the message shall contain a banner defining the highest security level of the complete message content and special handling instructions, printed at the top and bottom centers of the page. The characters of the caveat shall be bounded by asterisks and interspersed by spaces, (i.e., C_O_N F_I_D_E_N_T_I_A_L.).

4.4.3.2 Page Numbering

Each page will be numbered as the page-of-total, (i.e., Page 4 of 5).

4.4.3.3 Addressee

The Internal Distribution addressee shall be printed at the top left of each page. A separate copy of the message shall be printed for each addressee.

4.4.4 Status Monitoring

4.4.4.1 Message Backlog

The operator, via terminal displays, shall be able to monitor the current traffic backlog in the system. The displayed information shall identify the number of pending messages and the maximum queue capacity for each of the following:

- o Supervisor disposition
- o Composition Clerk input
- o Proofreader review
- o Paper tape output
- o Hardcopy output

The status of this information shall be maintained automatically by the system.

4.4.4.2 Transmission Channels

The operator, via terminal displays, shall be able to monitor the current paper tape input and output channel status. The displayed information shall include, where applicable, channel identifier, location, operative/inoperative, problem descriptor, and the estimated time of operational readiness. The status of this information will be maintained by the operators via terminal keyboard entry.

4.4.4.3 Hardware/Software

The CIMS shall output messages to the System Control Console whenever a hardware malfunction or software error is detected.

4.4.5 Report Generation

The CIMS will maintain historical information on both disk and magnetic tape media. The system shall provide the capability to retrieve pertinent data and to process it such that it can be displayed on the terminal or output to hardcopy. This processing may be performed in a background or offline mode. The operator shall have the capability to retrieve the following information:

4.4.5.1 DD-173 Message

The operator shall specify a unique message serial number and/or a unique DTG. The system shall retrieve and display the recorded images of that message as originally entered, modified during proofreading and/or output from CIMS.

4.4.5.2 Originators Message Log

The operator shall identify a specific originator office symbol and the start/stop time for the period of interest. The display shall include (where available) the DTG, SSN, precedence, message classification, and the message subject.

4.4.5.3 Station Traffic Log

The operator shall be provided with a history of the message traffic disseminated by the SMC. The operator shall specify the following parameters:

- o Start/Stop time
- o Communication channel or channels
- o Incoming and/or outgoing

4.4.5.4 Traffic Flow Summary

The operator shall specify a start/stop time for desired summary time period. The summary shall include the following:

- o Messages processed by precedence per hour and totals;
- o Message minimum, maximum and average handling time by precedence per hour and totals;
- o Message backlogs by precedence per hour per channel and totals.

4.4.5.5 Operator Position Log

The operator shall specify an operating position and a start/stop time for the period of interest. The response shall provide a time ordered history of pertinent information relative to the individual operator using the terminal. This shall include the following parameters:

- o Operator name
- o Office symbol
- o Log on time
- o Log off time
- o Operating position (i.e., A/D, CC, etc.)

4.4.5.6 System Event Summary

The operator shall specify a start/stop time for the period of interest. The system shall provide a time ordered history of the following events:

- o Software errors
- o Hardware on-line/off-line
- o Outgoing channel up/down
- o Incoming channel up/down
- o Queue backlog thresholds exceeded

4.4.6 Performance Assessment Reports

The system will maintain a message traffic data base to be used for the generation of summary statistical reports.

- o Total number of messages by precedence reporting for incoming and outgoing categories;
- o Total number of messages by precedence input and output over various channels;
- o Total number of service messages sent and received;
- o Total traffic volume by hour;
- o System throughput time to include maximum, minimum, and average for each precedence.

4.5 Logging

The system shall have the capability of recording predefined information on magnetic tape. This data shall include the contents of incoming and outgoing message traffic, event time occurrences, and a history of the message traffic through the system. Data recorded on the magnetic tapes will be retrieved in an offline or background (low priority processing) mode to prepare post exercise performance history data, selected message handling distributions, and individual message audit trails.

4.6 Date/Time Group Generation

The system shall generate a common time base for message control, display and hardcopy annotation, and event logging. The time base shall be of the form DDHHMMZ MON YY. The operator shall have the capability to initialize the time values.

4.7 Message Accountability

Each message received via paper tape or composed by the operators will be monitored as to its current location within the system. A current listing (display) of those messages that have been received but not logged as being output to the intended destination will be provided when requested by the operator.

4.8 Operator Alerts

The top line of each operator terminal display shall be reserved for operator alerts. The alert conditions detected by the system will include reception of specific message priorities, exceeding predefined message backlog thresholds, and system malfunctions. All alert messages and time of occurrence will be output to magnetic tape and the discrete event printer.

4.9 Output Message Validation

When the operator has submitted a message for transmission from CIMS (via paper tape punch or hardcopy) the system shall verify as a minimum, that the message contains the following:

- o Message contains a security classification (i.e., Secret, NATO Restricted, Confidential, etc.);
- o A precedence identifier is included (Z,O,P,R);
- o The Action precedence is greater than or equal to the Information precedence;
- o The TO routing indicator has at least one addressee.

If any of the above tests are not satisfied the system shall prompt the operator.

4.10 Message Summary Generation

The system shall extract predefined parameters from the paper tape input and operator entered (DD-173 form and Canned Messages) messages and will prepare a message summary as part of the messages pending review and disposition. The operator will assess the summary of messages pending review and/or disposition and select a message for display on his terminal.

4.11 Content Reformatting

In addition to formatting message contents for internal system handling, the messages will be automatically reformatted into the required format for each individual external destination. Individual messages approved for dissemination may generate an output requirement for multiple paper tapes that require a different (i.e., ACP-127 vice a JANAP-128) format. The system shall add the necessary protocol commands including blank characters, carriage returns, and line feeds.

4.12 Output Security Compatibility

When the operator has signaled that a displayed message is ready for release, the system will perform a test to assure the message security classification level is less than or is equal to the predefined level of the destination. If the test is successful, the message will be processed for transmission. If unsuccessful, the message shall not be processed for transmission, but the system shall generate a prompt to the operator. The operator must then modify the message contents and security level or cancel the conflicting requirement for output distribution.

4.13 Tape Punching Control

The system shall punch only one paper tape for each operator request. Each paper tape shall have a leader with directly readable (i.e., punched in alphanumeric characters vice Baudot code) destination information. The information shall indicate at a minimum, the applicable reader device identifier, the RI, and the security classification level. Operator requests for paper tape and logging of the actual Time of Transmission (TOT) shall be performed via a terminal device.

4.14 Ordering By Precedence

Message entered into the operator input queue or system output queues shall be grouped based on the message precedence indicator. The following precedences shall apply:

Z Flash (highest)

O Immediate

P Priority

R Routine (lowest)

Each message shall be categorized by precedence level and will be entered into that category at the bottom of the list of waiting messages. Individual messages may contain a computer recognizable Special Handling flag established by the CIMS operator. The system will enter the Special Handling message at the top of the applicable precedence category list of waiting messages and shall initiate an alert to the appropriate operator display.

4.15 Temporary Message Storage

For those messages that the operator elects to temporarily store rather than make an internal disposition or forward the message for output distribution, the system shall provide for the temporary saving of that message. The system shall accomodate temporary storages by operator positions. An operator may review a summary message listing of the temporary save queue for his position. He may select a message from that list for display, delete a message from that list or continue processing other messages in the system. A system log entry of the time, the operator, and necessary message identifier shall be made for each storage, retrieval or cancellation of temporary saved messages.

4.16 Internal Message Sorting

The system shall sort messages, for internal system distribution, based on predefined criteria. The sorting function will include distribution to specific operator positions, printer and/or hardcopy output, applicable paper tape punch device.

4.17 Invalid Operator Entries

When the operator enters an illegal (system logic cannot interpret) instruction, a message will be displayed advising the operator of the problem. The message shall, to the extent practical, describe the error and advise an alternate action.

4.18 Hardcopy Annotation

Each hardcopy printout shall have a security classification printed on the top and bottom centers of each page. Each page of multiple page messages shall be numbered as Page "X" of "Y". The system shall also print the intended recipients address and a sequence number to indicate that "this message is "Nth" message routed to the addressee today". The sequence number shall be reset to zero at 2400 hours.

4.19 Menu/List Selection

For those operator/system interactions involving the selection or identification from among multiple options, the system will provide the operator with a menu (or list) to select from. The selection from each menu shall be limited to one item. Where more than one selection must be made to specify the operator needs, the system will automatically display the next menu to the operator.

4.20 Function Keys

4.20.1 Character Insert (CI)

The operator shall have the capability to insert a character or space into an alphanumeric character string displayed on the terminal. A space shall appear when the operator has positioned the cursor below the desired location and depressed the CI function key. The existing character and all characters or spaces to its right shall be shifted one space to the right. The operator shall not be allowed to modify protected fields.

4.20.2 Character Delete (CD)

The operator shall have the capability to delete a character or space from an alphanumeric character string displayed on the terminal. The deletion shall occur when the operator has positioned the cursor below the desired location and depressed the CD function key. The identified character or space will be deleted and all characters or spaces to the right will be shifted one space to the left. The operator shall not be allowed to modify protected fields.

4.20.3 Line Insert (LI)

The operator shall have the capability to insert a new blank line between existing lines of displayed text. The operator shall identify the new line location by positioning the cursor at the left of the existing line. When the LI function key is depressed, the existing line and all below it shall be moved down one display line. The line to the right of the cursor shall contain all blanks.

4.20.4 Line Delete (LD)

The operator shall have the capability to delete a line within an existing text display. The operator shall identify the line to be deleted by positioning the cursor to the left of that line and depressing the LD function key. The contents of that line shall be erased and all lines below shall be moved up one line.

4.20.5 Enter

The ENTER function key shall provide the operator with a single command that indicates to the system that a procedural step is complete. The ENTER key shall be positioned on the terminal keyboard such that it can be easily located and depressed.

4.20.6 Cancel Message Preparation

A function key shall be provided to allow the operator to cancel message preparation effort. When the CANCEL function key is depressed, the system will perform the following dependent on the message entry mode:

4.20.6.1 Prompted Message Entry

If the operator has not progressed in the sequence to the step where the system assigned a serial number and DTG, the display will be erased and the operator provided a TASK SELECTION display. If the serial number and DTG were assigned before the CANCEL function key was depressed the system shall log the information entered and annotate the contents with a statement that the "message was cancelled by the operator" along with the current DTG. The operator will then be provided with a TASK SELECTION display.

4.20.6.2 Canned Message Entry

The system shall erase the information displayed on the screen and provide the operator with the appropriate TASK SELECTION display. This function shall not erase or modify the contents of the stored canned message.

4.20.6.3 Operator Composition Entry

The system shall erase the information displayed on the screen and provide the operator with the appropriate TASK SELECTION display.

4.20.7 Suspend Message Preparation

When reviewing incoming messages or preparing outgoing messages, the operator shall have the capability to temporarily suspend and save the contents of that message. When the operator depresses the SUSPEND function key, the system shall store the information and provide the operator with a TASK SELECTION display. The suspended message contents will be redisplayed when that message item is selected from the RESUME SUSPENDED MESSAGE display. Each operating position shall have a separate suspended message file.

4.20.8 Cursor Control

4.20.8.1 Function Keys

The capability shall be provided to reposition the cursor on the display. Four (4) function keys shall be assigned such that the cursor will move one line up or down or one space to the right or left when the applicable function key is depressed.

4.20.8.2 Initialization

Each new display shall initialize the cursor by placing it in the first leftmost column and line two or lower, dependent on the individual display.

4.20.8.3 Space Bar

The keyboard space bar, or a function key, will be enabled to move the cursor for menu selection type displays. Each depression of the space bar, or a function key, shall move the cursor down one line. In order to move the cursor upward, the operator shall utilize the UP function key.

4.20.9 Display Paging

When reviewing multiple page messages or system tables, the operator shall, where applicable, have the capability to display the contents of the previous page or the following page. To initiate this action, the operator will depress either the PREVIOUS PAGE or NEXT PAGE function key.

4.20.10 Accept Alert

When messages having a priority exceeding a predefined threshold are received, an operator alert prompt will be displayed. When the ACCEPT ALERT function key is depressed, the system will record the time, terminate the alert prompt, temporarily store relevant information of the operators task in progress, and display the alert message. When the operator has dispositioned the alert message, the system shall return the display to the contents at the time the function key was depressed.

4.21 Tutorial Assistance

A design objective of the CIMS is to provide an easy to use operator interface. Each authorized operator will have the basic typing skills and have been indoctrinated in the overall system functions. To further assist the operator each display, where practical, shall have a concisely worded informative instruction presented to identify the subsequent operator function.

4.22 Inter-Terminal Display Transfer

The capability shall be provided to permit operators to transfer displayed information to other terminals. The operator shall be provided a menu of authorized inter-terminal transfer destinations as items in the DISPOSITION display. The transfer shall cause a prompt to appear on the indicated terminal to alert the operator.

5.0 POSITION CAPABILITIES/CONSTRAINTS

Individual operator positions will be permitted to perform only selected functions. The system shall allow the operator to initiate approved tasks from the applicable TASK SELECTION menu. A matrix of authorized tasks versus operator position is provided in Figure 5-1.

	CIMS OPERATOR POSITIONS							
	SMCS	A/D	C/C	PRDR	S/O	R/O	F/C	STAFF
LOG ON	X	X	X	X	X	X		X
LOG OFF	X	X	X	X	X	X		X
SYSTEM INITIALIZATION	X							
PERIPHERAL CONFIGURATION	X							
OPERATOR POSITION ASSIGNMENT	X							
PROTECTED FILE UPDATE	X							
INITIATE PAPER TAPE PUNCHING					X			
LOG TIME OF TRANSMISSION					X			
MESSAGE ENTRY	X		X					
MESSAGE CONTENT EDITING	X		X	X				
INITIATE PAPER TAPE READING						X		
MONITOR MESSAGE BACKLOG	X	X	X	X	X	X		X
MONITOR TRANSMISSION CHANNELS	X	X	X	X	X	X		X
MONITOR HARDWARE/SOFTWARE	X	X	X	X	X	X		X
INTER TERMINAL TRANSFER	X		X	X				X
MESSAGE DISPOSITION	X		X	X				X
SUSPEND MESSAGE PREPARATION	X		X	X				X
CANCEL MESSAGE PREPARATION	X		X					X
ACCEPT ALERT	X		X	X				
REQUEST PERFORMANCE SUMMARIES	X							
REQUEST RETRANSMISSIONS					X			
MAINTAIN PHYSICAL ARCHIVE		X					X	
REQUEST A DD-173 HISTORY	X	X	X	X			X	X
REQUEST ORIGINATORS MSG. LOG	X	X	X	X			X	X
REQUEST STATION TRAFFIC LOG	X							
REQUEST TRAFFIC FLOW SUMMARY	X							
REQUEST OPERATOR POSITION LOG	X		X	X				X
REQUEST SYSTEM EVENT SUMMARY	X							

FIGURE 5-1

OPERATOR CAPABILITIES/CONSTRAINTS

6.0 HARDWARE

6.1 DOD Specification Applicability

The hardware components comprising the CIMS configuration shall be of good commercial quality and shall not be required to comply with any DOD specifications.

6.2 Environmental Requirements

The CIMS hardware shall be capable of the following:

- Commercial, ground, or air transportation from Denver to destination
- Truck or van transportation over rough field terrain in a non-powered state
- Operate in an air conditioned S-280 shelter environment. The components shall perform to specification within the following environmental ranges:

  Temperature - 15°C to 32°C

  Humidity - 10 to 90%

Component compatibility shall be determined through comparison of the values provided in vendor literature and specifications for that component.

6.3 Component Description

The CIMS shall be comprised of the following component quantities:

Computer	1
Operator Terminals	13
System Control Console	1
Disk Storage System	2
Magnetic Tape Storage System	2
Line Printer (High Speed)	1
Line Printer (Medium Speed)	7
Paper Tape Punch	4
Paper Tape Readers	4

The following paragraphs describe the major capabilities required of each component:

6.3.1 Computer

The computer shall be a Digital Equipment Corporation (DEC) PDP 11/34 general purpose mini-computer. The computer shall have the following attributes:

- o 128K words of core memory (K = 1024);
- o Hardware memory management with program protection, memory relocation and addressing of up to 124K of 16-bit words;
- o Automatic bootstrap loading;
- o Capability to execute self-test diagnostic routines;
- o Capability to perform input and output processing for multiple asynchronous peripheral devices;
- o Provide for processing prioritization of system interrupts.

6.3.2 Operator Terminals

The operator terminals shall have the following attributes as a minimum:

- o An alphanumeric character display capability of 24 lines of 80 characters. The character set shall include the 64 characters of the ASCII character set;
- o A standard typewriter keyboard;
- o Multiple function buttons to allow initiation of selected highly repetitive tasks by a single button depression;
- o Allow the operator to enter data and control signals into the computer and to display the processed information.

6.3.3 System Control Console

The System Control Console shall be the DEC LA-36-CE DECWRITER terminal. It shall provide for entering system commands, recording of system status messages and printing predefined system log entries of discrete events.

6.3.4 Disk Storage System

The Disk Storage System (DSS) shall have the following attributes:

- o There shall be two (2) disk drives;
- o Each drive shall be top-loading.

6.3.5 Magnetic Tape Storage System

The Magnetic Tape Storage System (MTSS) shall have the following attributes as a minimum:

- o There shall be two (2) tape drives;
- o Have capability to record data at 1600 bpi on 9 track magnetic tape;
- o Each magnetic tape shall have the capability to store 32 million characters per reel;
- o The ability to easily remove and mount tape reels;
- o The ability to read data from tape reels previously recorded on this machine.

6.3.6 Line Printer (High Speed)

The High Speed Line Printer (HSLP) devices shall have the following attributes as a minimum:

- o The HSLP shall print at a minimum of 300 lines per minute;
- o Each line shall have 80 columns and a minimum 64 character set;
- o The printer shall contain a paper advance mechanism, a top-of-form control and accommodate variable-length forms;
- o The printer shall be an impact type device;
- o The device shall contain a self-test capability;
- o The ability to change or load paper shall require minimal training and require no specific technical expertise.

6.3.7 Line Printer (Medium Speed)

The Medium Speed Line Printer (MSLP) devices shall have the following attributes as a minimum:

- o The MSLP shall print at a minimum rate of 150 lines per minute;
- o Each line shall have 80 columns and a minimum 64 character set;
- o The printer shall contain a paper advance mechanism, a top-of-form control and accommodate variable-length forms;
- o The printer shall be an impact type device;

- The device shall contain a self-test capability;
- The ability to change or load paper shall require minimal training and require no specific technical expertise.

6.3.8 Paper Tape Punch/Reader

The Paper Tape Punch/Reader devices shall have the following attributes as a minimum:

- The paper tape shall be 7/8 inch wide;
- The device(s) shall be capable of punching and reading the five (5) level BAUDOT code, ITA#2;
- The device shall be capable of reading 300 characters per second;
- The device shall be capable of punching at least 50 characters per second;
- The capability to start and stop the device(s) under operator control shall be provided.

6.4 Facility Power

The hardware components shall be capable of specified performance when supplied with 115 VAC 60 cycle or 220 VAC 50 cycle power.

6.5 TEMPEST Applicability

The system shall be required to meet current applicable TEMPEST requirements for each CIMS installation location. Those components installed in the S-280 shelters will be protected by the shelter and therefore shall not be required to individually meet TEMPEST specifications. The terminals and printer devices located external to the shelters shall adhere to the TEMPEST constraints. Cable runs between the shelters and the remoted devices shall be protected with approved COMSEC devices. Line driver and/or MODEMS shall be considered as part of the cable runs.

6.6 Remote Device Distances

The capability to remotely locate terminal and printer devices shall be provided. The maximum distance shall be 1000 feet of cable run.

7.0 MESSAGE HANDLING CAPACITY

For planning purposes the CIMS shall be capable of handling the following message traffic:

- o Paper Tape Input - 160 paper tapes per hour
- o DD-173 Messages - 26 Form DD-173 messages per hour
- o Paper Tape Output - 160 paper tapes per hour

An average length message is assumed to have 2100 characters including the header and EOM. An average of six (6) addressees shall also be assumed with a maximum of fifty (50).

APPENDIX A

ACRONYMS

A/D	Acceptance/Delivery Clerk
AIG	Address Indicator Group
C	Confidential
C	Centigrade
C/C	Composition Clerk
CID	Channel Identifier
CIMS	Corps Information Management System
CSC	Communication Service Clerk
CTOC	Corps Tactical Operations Center
DARCOM	Development and Research Command
DDHHMM MON YY	Days-Hours-Minutes/Month/Year
DEC	Digital Equipment Corporation
DSS	Disk Storage System
DTG	Date/Time Group
E	Unclassified-Encrypted for Transmission Only
EOM	End-of-Message
F/C	File Clerk
FCD	Functional Capabilities Description
FIFO	First In/First Out
GR	Group
HSLP	High Speed Line Printer
INFO	Information Addresses
L/D	Line Delete
L/I	Line Insert
MSLP	Medium Speed Line Printer
MTSS	Magnetic Tape Storage System
NP	Next Page
O	Immediate Priority
P	Priority
PLA	Plain Language Address
PP	Previous Page

R	Routine
RI	Routing Indicator
R/O	Receive Operator
S	Secret
SMC	Staff Message Center
SMCS	Staff Message Center Supervisor
S/O	Send Operator
SOM	Start Of Message
SSN	Station Serial Number
T	Top Secret
TO	TO (The Message Action Addressee)
TOP	Time Of Punch
TOT	Time Of Transmittal
U	Unclassified
VAC	Volts AC
XMT	Exempted Addressees
Z	Flash Priority